What Is Claimed Is:

1   1.   A method for scheduling processes within an operating system

2   based upon virtual server identifiers, wherein the operating system supports

3   multiple virtual servers that operate within separate virtual environments on a

4   single computing platform, the method comprising:

5   detecting an event that causes a scheduling priority for a process to be

6   updated;

7   looking up a virtual server identifier for the process, wherein the virtual

8   server identifier specifies a virtual server and an associated virtual environment

9   that the process operates within;

10   using the virtual server identifier to look up a scheduling priority

11 associated with the virtual server; and

12   calculating an updated scheduling priority for the process based upon the

13 scheduling priority associated with the virtual server.

1   2.   The method of claim 1, wherein calculating the updated scheduling

2   priority involves calculating the updated scheduling priority based upon:

3   a value, E, stored within a priority-related timer that keeps track of

4   execution time for the process;

5   a system priority, S_P, associated with the process; and

6   the scheduling priority, M, associated with the virtual server.

1   3.   The method of claim 2, wherein calculating the updated scheduling

2   priority, P, involves calculating $P = S_P + S(E/M)$, wherein S is a tunable constant

3   value.

1   4.   The method of claim 1, wherein the method further comprises:

2   receiving a command to adjust the scheduling priority associated with the

3   virtual server;

4   if the command is received from an authorized entity, adjusting the

5   scheduling priority associated with the virtual server so that the scheduling

6   priorities of all processes associated with the virtual server are modified.

1   5.   The method of claim 1, wherein the method further comprises

2   charging a fee for hosting the virtual server, wherein the fee is based upon the

3   scheduling priority associated with the virtual server.

1   6.   The method of claim 1, wherein detecting the event that causes the

2   scheduling priority for the process to be updated involves detecting one of:

3   the process entering a sleep state;

4   the process waking up from the sleep state; and

5   a priority-related timer associated with the process reaching a maximum

6   value.

1   7.   The method of claim 1, wherein looking up the virtual server

2   identifier for the process involves looking up the virtual server identifier within a

3   process structure maintained by the operating system for the process.

1   8.   A computer-readable storage medium storing instructions that

2   when executed by a computer cause the computer to perform a method for

3   scheduling processes within an operating system based upon virtual server

4   identifiers, wherein the operating system supports multiple virtual servers that

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5   operate within separate virtual environments on a single computing platform, the

6   method comprising:

7   detecting an event that causes a scheduling priority for a process to be

8   updated;

9   looking up a virtual server identifier for the process, wherein the virtual

10   server identifier specifies a virtual server and an associated virtual environment

11   that the process operates within;

12   using the virtual server identifier to look up a scheduling priority

13   associated with the virtual server; and

14   calculating an updated scheduling priority for the process based upon the

15   scheduling priority associated with the virtual server.

1   9.   The computer-readable storage medium of claim 8, wherein

2   calculating the updated scheduling priority involves calculating the updated

3   scheduling priority based upon:

4   a value, E, stored within a priority-related timer that keeps track of

5   execution time for the process;

6   a system priority, S_P, associated with the process; and

7   the scheduling priority, M, associated with the virtual server.

1   10.   The computer-readable storage medium of claim 9, wherein

2   calculating the updated scheduling priority, P, involves calculating $P = S_P + $

3    $S(E/M)$, wherein S is a tunable constant value.

1   11.   The computer-readable storage medium of claim 8, wherein the

2   method further comprises:

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1   receiving a command to adjust the scheduling priority associated with the

2 virtual server;

3   if the command is received from an authorized entity, adjusting the

4 scheduling priority associated with the virtual server so that the scheduling

5 priorities of all processes associated with the virtual server are modified.

1   12.   The computer-readable storage medium of claim 8, wherein the

2 method further comprises charging a fee for hosting the virtual server, wherein the

3 fee is based upon the scheduling priority associated with the virtual server.

1   13.   The computer-readable storage medium of claim 8, wherein

2 detecting the event that causes the scheduling priority for the process to be

3 updated involves detecting one of:

4   the process entering a sleep state;

5   the process waking up from the sleep state; and

6   a priority-related timer associated with the process reaching a maximum

7 value.

1   14.   The computer-readable storage medium of claim 8, wherein

2 looking up the virtual server identifier for the process involves looking up the

3 virtual server identifier within a process structure maintained by the operating

4 system for the process.

1   15.   An apparatus that schedules processes within an operating system

2 based upon virtual server identifiers, wherein the operating system supports

3 multiple virtual servers that operate within separate virtual environments on a

4 single computing platform, the apparatus comprising:

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5   a detection mechanism that is configured to detect an event that causes a

6   scheduling priority for a process to be updated;

7   a lookup mechanism that is configured to look up a virtual server identifier

8   for the process, wherein the virtual server identifier specifies a virtual server and

9   an associated virtual environment that the process operates within;

10   wherein the lookup mechanism is additionally configured to use the virtual

11   server identifier to look up a scheduling priority associated with the virtual server;

12   and

13   a calculating mechanism that is configured to calculate an updated

14   scheduling priority for the process based upon the scheduling priority associated

15   with the virtual server.

1   16.   The apparatus of claim 15, wherein the calculating mechanism is

2   configured to calculate the updated scheduling priority based upon:

3   a value, E, stored within a priority-related timer that keeps track of

4   execution time for the process;

5   a system priority, S_P, associated with the process; and

6   the scheduling priority, M, associated with the virtual server.

1   17.   The apparatus of claim 16, wherein the calculating mechanism is

2   configured to calculate the updated scheduling priority, P, by calculating

3    $P = S_P + S(E/M)$, wherein S is a tunable constant value.

1   18.   The apparatus of claim 15, further comprising a priority adjustment

2   mechanism that is configured to:

3   receive a command to adjust the scheduling priority associated with the

4   virtual server; and to

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1   adjust the scheduling priority associated with the virtual server so that the

2   scheduling priorities of all processes associated with the virtual server are

3   modified, if the command is received from an authorized entity.

1   19.   The apparatus of claim 15, further comprising a fee calculation

2   mechanism that is configured to calculate a fee for hosting the virtual server based

3   upon the scheduling priority associated with the virtual server.

1   20.   The apparatus of claim 15, wherein the detection mechanism is

2   configured to detect one of:

3   the process entering a sleep state;

4   the process waking up from the sleep state; and

5   a priority-related timer associated with the process reaching a maximum

6   value.

1   21.   The apparatus of claim 15, wherein the lookup mechanism is

2   configured to look up the virtual server identifier for the process by looking up the

3   virtual server identifier within a process structure maintained by the operating

4   system for the process.

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